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EXAMINER	
SHECHTMAN, SEAN P	
ART UNIT	PAPER NUMBER
2121	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/567,973	RODERS, JURGEN	
	Examiner	Art Unit	
	Sean P. Shechtman	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 February 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/28/06; 12/21/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *IDS filed 4/3/08*.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 4/3/08 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the information disclosure statement does not list each publication identified by publisher, author (if any), title, relevant pages of the publication, date, and place of publication. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because the form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 19-20 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph. The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited. For example, it is unclear what is referred to by the term it. Furthermore, it is unclear how a tool can be returned within a subsequent period of time after the returning?

The term "substantially" in claim 1 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in

the art would not be reasonably apprised of the scope of the invention. The position has been rendered indefinite by the use of the term substantially.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-10, 13, 17, 19-20, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 5,413,522 to Husson.

Husson teaches the following:

19. A method for machining a workpiece by means of a rotating tool provided with at least one cutting edge (Figs. 1, 2, element 11), in which method a machining operation is interrupted at predetermined time intervals, the tool is moved away from the workpiece, and a wear measurement is subsequently carried out on the tool (Col. 3, lines 3-36; Col. 2, lines 57-63), comprising:

returning the tool, after conducting a wear measurement thereof, into a feed position assumed by the tool before an interruption of a machining operation and within a subsequent period of time after said returning step (Col. 3, lines 1 - Col. 5, lines 23, the examiner respectfully submits that the deburring of a part and the measurement of a

point continued alternately, wherein the trajectory is not yet calculated the grinding wheel is not yet displaced to compensate for wear (until for example, 8 cycles, see Col. 3, lines 29-36) is returning the tool, after conducting a wear measurement thereof, into a feed position assumed by the tool before an interruption of a machining operation and within a subsequent period of time after said returning step);

continuously feeding said tool into contact with a workpiece in a manner that compensates for the wear measured (Abstract; Col. 3, lines 1 - Col. 5, lines 23, the examiner respectfully submits that the grinding wheel provided to be movable based on its trajectory which is calculated as a function of the wear measurements is continuously feeding said tool into contact with a workpiece).

20. The method of claim 19, wherein said step of continuously feeding is determined by assessing a machining path as it relates to at least one of a speed of rotation of said tool and a period of time that the tool has been in contact with the workpiece (Abstract; Col. 3, lines 1 - Col. 5, lines 23, trajectory as it relates to one or more cycles).

1. A method for machining a workpiece, comprising:

providing a rotating tool having at least one cutting edge (Figs. 1, 2, element 11);

interrupting, at a predetermined time interval, a machining operation utilizing the rotating tool (Col. 3, lines 3-36; Col. 2, lines 57-63, the deburring of a part and the measurement of a point continued alternately, and/or for example, 8 cycles);

performing a measurement on the rotating tool during said interruption to determine a wear measurement (Col. 3, lines 1 - Col. 5, lines 23, the measurement of a point);

continuing the machining operation by returning the rotating tool into a feed position substantially identical to a feed position of the rotating tool prior to the interruption (Col. 3, lines 1 - Col. 5, lines 23, the examiner respectfully submits that the deburring of a part and the measurement of a point continued alternately, wherein the trajectory is not yet calculated the grinding wheel is not yet displaced to compensate for wear (until for example, 8 cycles, see Col. 3, lines 29-36) is continuing the machining operation by returning the rotating tool into a feed position substantially identical to a feed position of the rotating tool prior to the interruption); and

feeding the tool into contact with a work piece in a manner to compensate for the wear measurement determined (Abstract; Col. 3, lines 1 - Col. 5, lines 23, the examiner respectfully submits that the grinding wheel provided to be movable based on its trajectory which is calculated as a function of the wear measurements is continuously feeding said tool into contact with a workpiece).

2. The method according to claim 1, wherein one of a speed of the rotating tool or a period of time of a continuous feed of the tool is defined in relation to a machining path (Abstract; Col. 3, lines 1 - Col. 5, lines 23, trajectory as it relates to one or more cycles).

3. The method according to claim 1, wherein one of a speed of the rotating tool or a period of time of a continuous feed of the tool is defined through a machining time (Abstract; Col. 3, lines 1 - Col. 5, lines 23, cycles).

4. The method according to claim 1, wherein one of a speed of the rotating tool or a period of time of a continuous feed of the tool is defined through the wear measured (Abstract; Col. 3, lines 1 - Col. 5, lines 23, cycles).

5. The method according to claim 1, further comprising generating at least one of an error message or a warning message transmitted if a wear measurement is not being completed by the expiration of a predetermined time interval set for carrying out a wear measurement. Claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed (MPEP 2111.04). The claimed condition of "if a wear measurement is not being completed by the expiration of a predetermined time interval set for carrying out a wear measurement" is made optional by the terminology used in the claim because the claim never requires that "a wear measurement is not completed by the expiration of a predetermined time interval set for carrying out a wear measurement". The claimed condition of the "if" would not ever reasonably occur in the prior art reference because the prior art reference does not teach "a wear measurement is not completed by the expiration of a predetermined time interval set for carrying out a wear measurement". Therefore, since the claimed condition of "if" would not ever reasonably occur in the prior art reference, the limitations which are only conditionally required based on the claimed condition occurring are not

required by the claim. Therefore the claim fails to patentably distinguish over the teachings of the reference.

6. The method according to claim 1, wherein the wear measurement comprises measuring wear along the entire cutting edge of the tool (See Figs. 3-6, Col. 3, lines 9 – Col. 4, lines 20).

7. The method according to claim 1, further comprising compensating for the wear measured by performing corrections carried out sectionwise for individual small sections along a cutting edge of the tool (Col. 3, lines 9 – Col. 4, lines 20).

8. The method according to claim 1, wherein the wear measurement comprises a measurement on an enveloping body formed during rotation of the tool (See Figs. 3-6, Col. 3, lines 9 – Col. 4, lines 20, See also paragraph 19 of the instant specification, enveloping body is broad).

9. The method according to claim 1, wherein the tool is fed for wear correction in a direction perpendicular to a workpiece surface (See Figs. 1-2, Col. 3, lines 9 – Col. 4, lines 20).

10. The method according to claim 9, wherein said method is carried out on the basis of an engagement point of the cutting edge of the tool as predetermined by a machining program (Col. 3, lines 9 – Col. 4, lines 20, Col. 2, lines 57-63).

13. The method according to claim 1, further comprising changing the tool when a predetermined maximum total wear of the tool has been reached. Claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed (MPEP 2111.04). The claimed condition of “when a predetermined

maximum total wear of the tool has been reached" is made optional by the terminology used in the claim because the claim never requires that "a predetermined maximum total wear of the tool has been reached". The claimed condition of "when" would not ever reasonably occur in the prior art reference because the prior art reference does not teach "a predetermined maximum total wear of the tool has been reached". Therefore, since the claimed condition of "when" would not ever reasonably occur in the prior art reference, the limitations which are only conditionally required based on the claimed condition occurring are not required by the claim. Therefore the claim fails to patentably distinguish over the teachings of the reference.

17. The method according to claim 1, wherein the machining operation is carried out in a linear fashion (Col. 3, lines 37-45).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-10, 13-16, 18, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,816,892 to Lunn in view of U.S. Pat. No. 5,871,391 to Pryor.

Lunn teaches the following:

19. A method for machining a workpiece by means of a rotating tool provided with at least one cutting edge (Fig. 1, tool 20), in which method a machining operation, comprising:

the tool, after conducting a wear measurement thereof, is in a feed position assumed by the tool (Fig. 2, Col. 4, lines 24-65);

continuously feeding said tool into contact with a workpiece in a manner that compensates for the wear measured (Fig. 2, Col. 4, lines 24-65, increase speed to increase deflection and adjust for wear).

20. The method of claim 19, wherein said step of continuously feeding is determined by assessing a machining path as it relates to at least one of a speed of rotation of said tool and a period of time that the tool has been in contact with the workpiece (Figs. 2-4, Col. 3, lines 26 - Col. 4, line 65).

1. A method for machining a workpiece, comprising:

providing a rotating tool having at least one cutting edge (Fig. 1, tool 20);

a machining operation utilizing the rotating tool (whole document);

performing a measurement to determine a wear measurement (Fig. 2, Col. 4, lines 24-65);

continuing the machining operation (Fig. 2, Col. 4, lines 24-65); and

feeding the tool into contact with a work piece in a manner to compensate for the wear measurement determined (Fig. 2, Col. 4, lines 24-65, increase speed to increase deflection and adjust for wear).

2. The method according to claim 1, wherein one of a speed of the rotating tool or a period of time of a continuous feed of the tool is defined in relation to a machining path (Figs. 2-4, Col. 3, lines 26 - Col. 4, line 65).

3. The method according to claim 1, wherein one of a speed of the rotating tool or a period of time of a continuous feed of the tool is defined through a machining time (Figs. 2-4, Col. 3, lines 26 - Col. 4, line 65).

4. The method according to claim 1, wherein one of a speed of the rotating tool or a period of time of a continuous feed of the tool is defined through the wear measured (Figs. 2-4, Col. 3, lines 26 - Col. 4, line 65).

5. The method according to claim 1, further comprising generating at least one of an error message or a warning message transmitted if a wear measurement is not being completed by the expiration of a predetermined time interval set for carrying out a wear measurement. Claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed (MPEP 2111.04). The claimed condition of “if a wear measurement is not being completed by the expiration of a predetermined time interval set for carrying out a wear measurement” is made optional by the terminology used in the claim because the claim never requires that “a wear measurement is not completed by the expiration of a predetermined time interval set for carrying out a wear measurement”. The claimed condition of the “if” would not ever reasonably occur in the prior art reference because the prior art reference does not teach “a wear measurement is not completed by the expiration of a predetermined time interval set for carrying out a wear measurement”. Therefore, since the claimed

condition of "if" would not ever reasonably occur in the prior art reference, the limitations which are only conditionally required based on the claimed condition occurring are not required by the claim. Therefore the claim fails to patentably distinguish over the teachings of the reference.

6. The method according to claim 1, wherein the wear measurement comprises measuring wear along the entire cutting edge of the tool (Figs. 2-4, Col. 3, lines 26 - Col. 4, line 65, cutting teeth 23, See Fig. 1).

7. The method according to claim 1, further comprising compensating for the wear measured by performing corrections carried out sectionwise for individual small sections along a cutting edge of the tool (Figs. 2-4, Col. 3, lines 26 - Col. 4, line 65, adjustment closed loop, ongoing basis).

8. The method according to claim 1, wherein the wear measurement comprises a measurement on an enveloping body formed during rotation of the tool (Figs. 2, element 23).

9. The method according to claim 1, wherein the tool is fed for wear correction in a direction perpendicular to a workpiece surface (Fig. 1, Col. 4, lines 24-60).

10. The method according to claim 9, wherein said method is carried out on the basis of an engagement point of the cutting edge of the tool as predetermined by a machining program (Figs. 2-4, Col. 3, lines 26 - Col. 4, line 65).

13. The method according to claim 1, further comprising changing the tool when a predetermined maximum total wear of the tool has been reached (Col. 4, lines 24-60).

15. The method according to claim 1, further comprising, after the wear measurement has been formed, continuing the machining operation at a slightly superelevated level to compensate for errors caused by wear on the tool and to compensate for elastic deformations of the tool (Figs. 2-4, Col. 3, lines 26 - Col. 4, line 65).

16. The method according to claim 15, wherein the machining operation is carried out in at least one of a lateral direction or in a normal direction relative to a surface of the workpiece in order to compensate for any lateral deviations of the tool (Figs. 2-4, Col. 3, lines 26 - Col. 4, line 65).

18. The method according to claim 1, wherein the machining operation is carried out in a non-linear fashion (Fig. 3).

Referring to claims 1, 19, Lunn fails to teach the machining operation is interrupted at predetermined time intervals, the tool is moved away from the workpiece, a wear measurement is subsequently carried out on the tool during the interruption, returning the tool, after conducting a wear measurement thereof, into a feed position substantially identical to a feed position assumed by the tool before an interruption of a machining operation and within a subsequent period of time after said returning step. Referring to claim 14, Lunn fails to teach further comprising continuing the machining operation with a replacement tool by positioning said replacement tool at substantially the same place that said rotating tool occupied prior to said step of interrupting and continuing the feed of the replacement tool against the workpiece using a smaller value

such that the replacement tool is not yet in engagement with the workpiece at the beginning of the continued machining operation.

Referring to claims 1, 19, 14, Pryor teaches a machining operation is interrupted at predetermined time intervals, the tool is moved away from the workpiece, a wear measurement is subsequently carried out on the tool during the interruption, and then the tool is returned, after conducting a wear measurement thereof, into a feed position substantially identical to a feed position assumed by the tool before an interruption of a machining operation and within a subsequent period of time after said returning step (Col. 29, lines 46 - Col. 30, lines 49, taking action regarding the tool, only if necessary; Col. 40, lines 42 - Col. 42, line 37, "returning said tool to said working position", and if not necessary then not adjusting said working position, not modifying tool, or not exchanging tool); further comprising continuing the machining operation with a replacement tool by positioning said replacement tool at substantially the same place that said rotating tool occupied prior to said step of interrupting and continuing the feed of the replacement tool against the workpiece using a smaller value such that the replacement tool is not yet in engagement with the workpiece at the beginning of the continued machining operation (Col. 29, lines 46 - Col. 30, lines 49, Col. 40, lines 42 - Col. 42, line 37).

Lunn and Pryor are analogous art because they are from the same field of endeavor, machining.

Since Pryor teaches a wear measurement and tool replacement technique that enables improvements to turning, grinding milling and other machining processes using

electro-optical sensors for analyzing images or patterns related to tools used to work objects; wherein unique electro-optical sensing methods and apparatus are capable of high accuracy measurement required for modern industry; wherein a two axis image analysis of the backlit tool edge is performed to determine tool position, damage, or wear, and where desired appropriate control steps taken to change the tool; wherein the tool itself is equipped with optically sensed contact members according to the invention to measure the part produced with the tool, or to determine the deflection of the tool (Abstract); further enabling tool inspection to be done during part load unload cycles to cause the least effect on cycle time of the machine; wherein tool contour variation due to wear and the progressive degradation of the tool can be charted to allow a prediction to be made of the point of tool breakage, with such a prediction, tool inspections and part inspection frequency can be raised toward the end of tool life to assure that proper function is maintained (Col. 40, lines 23-41), it would have been obvious to one of ordinary skill in the art to apply the technique of the wear measurement and tool replacement as taught by Pryor to improve Lunn for the predictable results of enabling improvements to turning, grinding milling and other machining processes using electro-optical sensors for analyzing images or patterns related to tools used to work objects; wherein unique electro-optical sensing methods and apparatus are capable of high accuracy measurement required for modern industry; wherein a two axis image analysis of the backlit tool edge is performed to determine tool position, damage, or wear, and where desired appropriate control steps taken to change the tool; wherein the tool itself is equipped with optically sensed contact members according to the invention to

measure the part produced with the tool, or to determine the deflection of the tool (Abstract); further enabling tool inspection to be done during part load unload cycles to cause the least effect on cycle time of the machine; wherein tool contour variation due to wear and the progressive degradation of the tool can be charted to allow a prediction to be made of the point of tool breakage, with such a prediction, tool inspections and part inspection frequency can be raised toward the end of tool life to assure that proper function is maintained (Col. 40, lines 23-41).

6. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Husson or Lunn/Pryor, as applied to the claims above, and further in view of U.S. Pat. No. 7,089,081 to Palmgren.

Husson or Lunn/Pryor fail to teach wherein said method is performed using an online calculation of one or more engagement points of the cutting edge of the tool said calculation being dependent upon the amount of material removed from the workpiece; wherein a predetermined time interval is determined on the basis of material removed by a cutting edge of the tool.

Palmgren teaches a tool is fed for wear correction in a direction perpendicular to a workpiece surface; wherein said method is performed using an online calculation of one or more engagement points of the cutting edge of the tool said calculation being dependent upon the amount of material removed from the workpiece; wherein a predetermined time interval is determined on the basis of material removed by a cutting edge of the tool (Figs. 3-8, Col. 3, lines 60 - Col. 10, lines 44).

Husson or Lunn/Pryor and Palmgren are analogous art because they are from the same field of endeavor, machining.

Since Palmgren teaches wear correction technique that enables an abrasive manufacturing process to achieve a controlled performance parameter, e.g., an amount of material removal, without requiring the use of feedback controls within the abrasive manufacturing process, for example, a system includes a machine to abrade a workpiece with an abrasive article, and a controller to control the application of the abrasive article to the workpiece by the machine to achieve a substantially constant cut rate for the abrasive article, wherein the controller controls one or more process variables in accordance with an open-loop mathematical model that relates the cut rate of the abrasive article to an application force of the abrasive article to achieve controlled material removal, for example, a constant rate of cut can be achieved or a fixed amount of material can be removed while abrading one or more workpiece in accordance with the model (Abstract); and further enables an abrasive manufacturing process to achieve a substantially controlled cut or finish without requiring the use of feedback controls within the abrasive manufacturing process, moreover, the techniques may reduce the need for manual quality control measurements of the abraded workpiece, and manual adjustments to the abrasive manufacturing process; further enabling reduction in any variability between workpieces, more specifically, the techniques may be used to model and compensate for wear to the abrasive article over a period of time, wherein by automatically adjusting process variables, e.g., application force, based on the duration of use, the techniques can be used to more precisely abrade workpieces; further

enables an increased number of workpieces to be processed using a common abrasive article, for example, application of the techniques to achieve a substantially constant cut on a series of workpieces may reduce the time used for each workpiece during the initial stages of the abrasive's life, i.e., when the abrasive article is new, and the abrading time may be increased later in the life of the abrasive article, as a result, the abrasive article may experience reduced wear on the initial workpieces in comparison with conventional techniques that utilize a fixed abrading time for each workpiece throughout the life of the abrasive article (Col. 3, lines 1-26), it would have been obvious to one of ordinary skill in the art to apply the technique of the wear correction as taught by Palmgren to improve Husson or Lunn/Pryor for the predictable results of enabling an abrasive manufacturing process to achieve a controlled performance parameter, e.g., an amount of material removal, without requiring the use of feedback controls within the abrasive manufacturing process, for example, a system includes a machine to abrade a workpiece with an abrasive article, and a controller to control the application of the abrasive article to the workpiece by the machine to achieve a substantially constant cut rate for the abrasive article, wherein the controller controls one or more process variables in accordance with an open-loop mathematical model that relates the cut rate of the abrasive article to an application force of the abrasive article to achieve controlled material removal, for example, a constant rate of cut can be achieved or a fixed amount of material can be removed while abrading one or more workpiece in accordance with the model (Abstract); and further enables an abrasive manufacturing process to achieve a substantially controlled cut or finish without requiring the use of feedback controls

within the abrasive manufacturing process, moreover, the techniques may reduce the need for manual quality control measurements of the abraded workpiece, and manual adjustments to the abrasive manufacturing process; further enabling reduction in any variability between workpieces, more specifically, the techniques may be used to model and compensate for wear to the abrasive article over a period of time, wherein by automatically adjusting process variables, e.g., application force, based on the duration of use, the techniques can be used to more precisely abrade workpieces; further enables an increased number of workpieces to be processed using a common abrasive article, for example, application of the techniques to achieve a substantially constant cut on a series of workpieces may reduce the time used for each workpiece during the initial stages of the abrasive's life, i.e., when the abrasive article is new, and the abrading time may be increased later in the life of the abrasive article, as a result, the abrasive article may experience reduced wear on the initial workpieces in comparison with conventional techniques that utilize a fixed abrading time for each workpiece throughout the life of the abrasive article (Col. 3, lines 1-26).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Shechtman whose telephone number is (571)272-3754. The examiner can normally be reached on 9:30am-6:00pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SPS
Sean P. Shechtman
August 29, 2010

/Sean P. Shechtman/
Primary Examiner, Art Unit 2121